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New Genera Related to the Genus *Brephosceles* Hull, 1934 (Acarina: Proctophyllodidae)

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ABSTRACT

New Genera Related to the Genus *Brephosceles* Hull, 1934 (Acarina: Proctophyllodidae)

Five new genera are described; these and the included species are (type species listed first): *Dichobrephosceles* with *Dermaleichus actitidis* Canestrini, 1878 (=*Brephosceles dolichocaulus* Gaud and Mouchet, 1957, new synonymy), *D. eroliae,* new species (ex: *Erolia alpina,* England); *Homeobrephosceles* with *Proctophyllodes (Alloptes) discosurus* Trouessart, 1886, *Brephosceles orthothrix* Gaud and Mouchet, 1957; *Onychalloptes* with *Proctophyllodes (Alloptes) microphaeton* Trouessart, 1885, *Alloptes minutus* Trouessart, 1899; *Aramolichus* with *Aramolichus foliatus,* new species (ex: *Aramus guarauna,* Bolivia); *Psilobrephosceles* with *Dermalichus ortygometrae* Canestrini, 1878. Species included in the genus *Brephosceles (s.s.)* are listed; species transferred to *Brephosceles* are: *Proctophyllodes (Pterocolus) flagellifer discursus* Trouessart, 1885; *Pterocolus lambda* Trouessart 1885; *Alloptes marginiventris* Trouessart, 1889; *Pterodectes pelagicus* Vitzthum, 1921.

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Peterson[1]
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New Genera Related to the Genus *Brephosceles* Hull, 1934 (Acarina: Proctophyllodidae)

INTRODUCTION

In 1934, Hull erected the genus *Brephosceles* for two species of feather mites characterized primarily by males having well-developed terminal lobes bearing lamellae on their free margins. Since 1934, all species of the subfamilies Alloptinae and Proctophyllodinae having males with strongly bifurcate hysterosomae have been placed in the genus. If certain of these species are re-assigned to new or named genera, the genus *Brephosceles* (*s.s.*) is a large, but homogenous group of species.

The relative development, positions, and absence of specific setae, the structures of the male termini and genital regions, and the conditions of epimerites I restrict the definitions of the genus *Brephosceles* and the related new genera. Except for the male lobar region, the structural modifications are self-explanatory and the chaetotaxal signatures follow Atyeo and Gaud (1966).

The bifurcate male terminus or lobar region can be considered as the two posterior prolongations of the hysterosoma or conversely, the terminal portions of the idiosoma separated by a deep cleft. The anterodorsal surface of each lobe may be continuous with the dorsal surface of the anterior hysterosoma (fig. 38) or the surfaces may be partially (fig. 1) or completely (fig. 5) separated by a membranous area or suture. Each lobe bears a series of marginal lamellae. The inner margin has one (rarely two) *interlobar lamella(e)* which may or may not connect anteriorly to the lamella of the opposite side. The outer margin may have an *extralobar lamella* extending for the entire length of the lobe, restricted to the antero- or posterolateral surface, or absent. Lastly, the apex of each lobe may have one or two small *postlobar lamellae*; if two are present, the mesal member is largest and the smaller lamella is ventral to seta l_5.

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FAMILY PROCTOPHYLLODIDAE
SUBFAMILY ALLOPTINAE

Brephosceles Hull

Brephosceles Hull, 1934, Trans. North. Nat. Un., 1(3): 205.

The genus is being revised, so a complete synonymy is not deemed necessary at this time. Illustrations of a typical species are included (figs. 1–4) and the genus can be defined as follows:

Mites occurring on Gaviidae (Gaviiformes), Diomedeidae, Procellariidae, Hydrobatidae (Procellariiformes), Anhimidae, Anatidae (Anseriformes), Gruidae (Gruiformes), Haematopodidae, Charadriidae, Burhinidae, Glareolidae (Charadriiformes). Both sexes with epimerites I Y-shaped, femora and genua of all legs partially fused, seta *vi* present, seta *ve* present or absent, setae *kT* on tibia II and on genu II present, setae *ba* on tarsi I-II absent. Males with well-developed terminal lobes, legs IV equal to or larger than legs III, coxal fields III–IV open or closed, pregenital apodeme independent or fused with epimerites IV*a*. Genital organ minute, 2 postlobar lamellae; setae: d_3 on inner margin of lobe, d_5 on postlobar lamella and smaller than l_5, *pae* on extralobar lamella and usually smaller than l_4. Female similar to *Alloptes* species, without terminal appendages, with pregenital apodeme independent or connected to epimerites IV to form a Moresque arch as in *Pterodectes*.

Type species: *Pterolichus forficiger* Mégnin and Trouessart, 1884 (by original designation).

Current investigations indicate that the genus *Brephosceles* (*s.s.*) includes twelve named and approximately thirty-eight new species. The named species to be retained in the genus and pertinent synonymies are:

Brephosceles anatina Dubinin

Brephosceles anatina Dubinin, 1951, Akad. Nauk S.S.S.R., Zool. Inst., Parazitol. Sborn., 13: 223–224, fig. 52. *Ex: Anas platyrhyncha* (Anatidae).

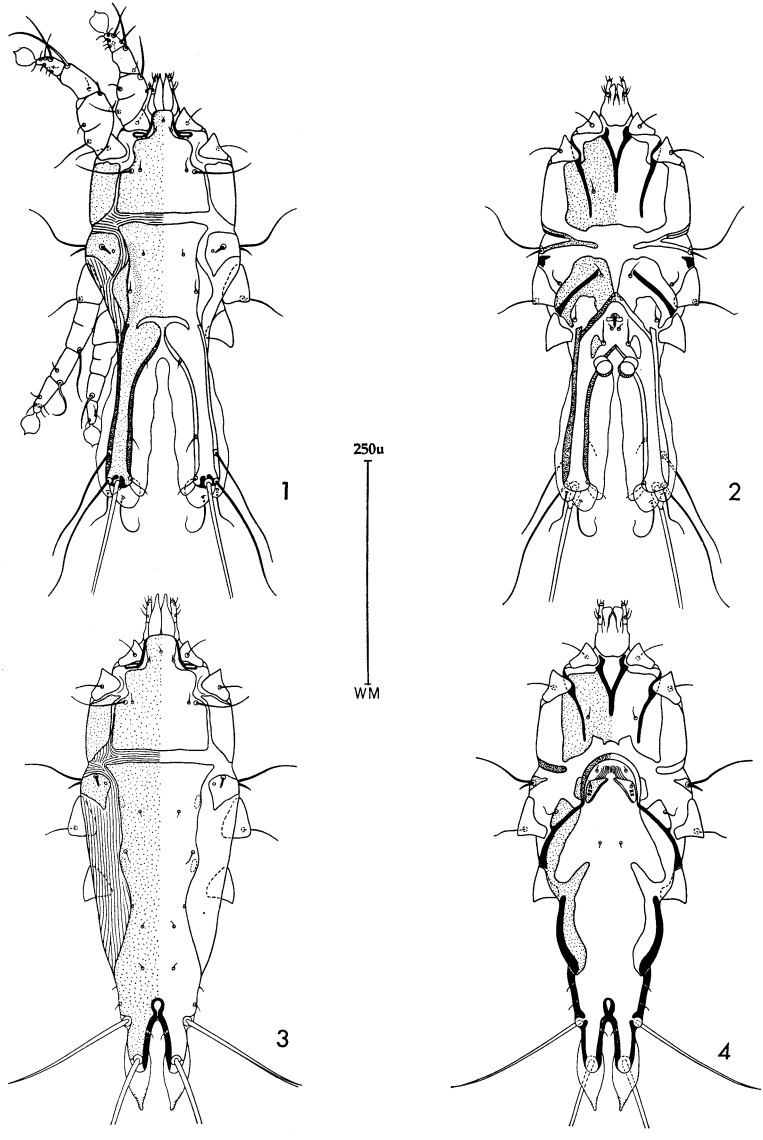
Brephosceles charadrii Dubinin

Brephosceles charadrii Dubinin, 1951, Akad. Nauk S.S.S.R., Zool. Inst., Parazitol. Sborn., 13: 225–226, fig. 53. *Ex: Charadrius dubius, C. placidus* (Charadriidae).

Brephosceles decapus (Gaud)

Alloptes decapus Gaud, 1953, Ann. Parasitol. hum. comp., 28(3): 196–197, fig. 2. *Ex: Oceanodroma castro* (Hydrobatidae).

Brephosceles decapus, Gaud and Till, 1961, Publ. So. Afr. Inst. Med. Res., 11(L): 241.



Figs. 1–4. *Brephosceles decapus* (Gaud), male: dorsal (1) and ventral (2) aspects; female: dorsal (3) and ventral (4) aspects.

Brephosceles forficiger (Mégnin and Trouessart)

Pterolichus forficiger Mégnin and Trouessart, 1884, J. Microgr., 8 (7): 380–381, fig. 48(*a, b*). *Ex: Gavia immer* (= *Colymbus gracilis*) (Gaviidae).

Pterocolus forficiger, Berlese, 1898, A. M. S., fasc. 88, no. 5.

Pterolichus (Eupterolichus) forficiger, Canestrini and Kramer, 1899, Tierreich, 7: 50.

Brephosceles forficiger, Dubinin, 1951, Akad. Nauk S.S.S.R., Zool. Inst., Parazitol. Sborn., 13: 222.

Brephosceles furcifer (Trouessart)

Proctophyllodes (Pterocolus) ortygometrae furcifer Trouessart, 1885, Bull. Soc. Etud. Sci. Angers, 14: 73–74. *Ex: Rhinoptilus africanus* (= *Cursorius bicinctus*) (Glareolidae).

Pterodectes ortygometrae furcifer, Canestrini and Kramer, 1899, Tierreich, 7: 122.

Brephosceles ortygometrae furcifer, Radford, 1953, Parasitol., 42 (3, 4): 202.

Brephosceles furcifer, Gaud and Till, 1961 Publ. So. Afr. Inst. Med. Res., 11(L): 241.

Brephosceles histionotus Gaud and Mouchet

Brephosceles histionotus Gaud and Mouchet, 1957, Ann. Parasitol. hum. comp., 32(5–6): 499–500, figs. 2(A), 3(C, D). *Ex: Charadrius forbesi* (Charadriidae).

Brephosceles lambda (Trouessart), new combination

Pterocolus lambda Trouessart, 1885, Bull. Soc. Etud. Sci. Angers, 14: 72. *Ex: Nettapus auritus* (Anatidae).

Alloptes lambda, Canestrini and Kramer, 1899, Tierreich, 7: 113–114.

Brephosceles marginiventris (Trouessart), new combination

Alloptes marginiventris Trouessart, 1899, Bull. Soc. Etud. Sci. Angers, 28: 58–59. *Ex: Diomedea chlororhynchos* (Diomedeidae).

Brephosceles pelagicus (Vitzthum), new combination

Pterodectes pelagicus Vitzthum, 1921, Arch. f. Naturgesch., A, 87(4): 66–69, figs. 48, 49. *Ex: Hydrobates pelagicus* (Hydrobatidae).

Brephosceles stercorarii Dubinin

Brephosceles stercorarii Dubinin, 1951, Akad. Nauk S.S.S.R., Zool. Inst., Parazitol. Sborn., 13: 222. *(Nomen nudum)*

Brephosceles superbus Dubinin

Brephosceles superbus Dubinin, 1949, Akad. Nauk S.S.S.R., Zool. Inst., Trudy, 11: 221. *(Nomen nudum)*

Brephosceles superbus Dubinin, 1952, Akad. Nauk S.S.S.R., Zool. Inst., Trudy, 12: 262–264, fig. 7. *Ex: Puffinus tenuirostris* (Procellariidae).

Brephosceles vanelli Gaud

Brephosceles vanelli Gaud, 1959, Bull. Soc. Sci. nat. Phys. Maroc., 37(2): 114–115. *Ex: Vanellus vanellus* (Charadriidae).

One of Trouessart's species, presumably in the Alloptinae, has males with bifurcate termini and is provisionally placed in the genus *Brephosceles.* The location of the type is unknown.

Brephosceles discurus (Trouessart), new combination

Proctophyllodes (Pterocolus) flagellifer discurus Trouessart, 1885, Bull. Soc. Etud. Sci. Angers, 14: 74. *Ex: Grus grus* (= *G. cinerea*) (Gruidae).

Pterodectes actitidis discura, Canestrini and Kramer, 1899, Tierreich, 8: 123.

Pterodectes actidis var. *discura,* Radford, 1953, Parasitol., 42(3, 4): 214.

Pterodectes actidis discura, Radford, 1958, Rev. Brasil. Entomol., 8: 124.

To complete the restriction of the genus *Brephosceles,* three species must be re-assigned to different genera. The first two species are placed in the genus *Alloptoides* Gaud, 1961 and the remaining species are placed in the genus *Diproctophyllodes* Atyeo and Gaud, 1968 of the subfamily Proctophyllodinae.

Alloptoides aythinae (Dubinin) new combination

Brephosceles aythinae Dubinin, 1951, Akad, Nauk S.S.S.R., Zool., Inst., Parazitol. Sborn., 13: 226, 227, fig. 54. *Ex: Netta rufina* (Anatidae).

Alloptoides gynurus (Trouessart), new combination

Alloptes gynurus Trouessart, 1886, Bull. Soc. Etud. Sci. Angers, 16: 145–146. *Ex: Alopochen aegypticus* (= *Chenalopex a.*) (Anatidae).

Pterodectes gynurus, Canestrini and Kramer, 1899, Tierreich, 7: 125.

Alloptes gynurus, Gaud, 1953, Ann. Parasitol. hum. comp., 28(3): 197.

Brephosceles gynurus, Gaud and Till, 1961, Publ. So. Afr. Inst. Med. Res., 11(L): 242.

Diproctophyllodes dielytra (Trouessart)

Proctophyllodes (Alloptes) dielytra Trouessart, 1885, Bull. Soc. Etud. Sci. Angers, 14: 66. *Ex: Pipra erythrocephala, P. aureola* (Pipridae).

Alloptes dielytra, Canestrini and Kramer, 1899, Tierreich, 7: 111.
Brephosceles dielytra, Berla, 1959, Bol. Mus. Nac., n.s., Zool., (209): 1–2, figs. 1, 2.
Brephosceles exquisitus Berla, 1959, Bol. Mus. Nac., n.s., Zool., (209): 3–4, figs. 3, 4. *Ex: Pipra erythrocephala rubrocapilla* (Pipridae).
Diproctophyllodes dielytra, Atyeo and Gaud, 1968, Bull. Univ. Nebraska Mus., in press.

Dichobrephosceles, new genus

Although related to the genus *Brephosceles,* the new genus is based on two species unique to the Alloptinae. A notable structure is the divergent (free) epimerites I.

Mites ectoparasitic on Scolopacidae (Charadriiformes). Both sexes with epimerites I free, femora and genua of all legs partially fused, setae *vi* present, setae *ve* and d_1 absent, seta kT on tibia III and σ_1 on genu II present, seta *ba* on tarsi I–II absent. Males with well-developed terminal lobes, legs subequal, coxal fields III–IV open, pregenital apodeme may be joined with epimerites IV*a*, 1 postlobar lamella; setae: d_3 on inner margin of lobe, d_5 on postlobar lamella and smaller than l_5, *pae* dorsal on extralobar lamella and shorter than l_4. Female similar to *Brephosceles* species, without terminal appendages, with pregenital apodeme independent, with unique spermatheca (fig. 12).

Type species: *Dermaleichus actitidis* Canestrini, 1878.

Derivation: *Dicha,* apart + *Brephosceles.*

Dichobrephosceles actitidis (Canestrini), new combination

Dermaleichus actitidis Canestrini, 1878, Atti R. Ist. Veneto sci., ser. 5, 5: 57–58.
Proctophyllodes (Pterocolus) flagellifer, Trouessart, 1885, Bull. Soc. Etud. Sci. Angers, 14: 74.
Pterocolus actitidis, Canestrini, 1886, Prosp. Acarofauna ital., 2: 300.
Pterocolus actitidis, Berlese, 1888, A. M. S., fasc. 77, no. 1.
Pterodectes actitidis, Canestrini and Kramer, 1899, Tierreich, 7: 123.
Brephosceles actitidis, Dubinin, 1951, Akad. Nauk S.S.S.R., Zool. Inst., Parazitol. Sborn., 13: 222–223, fig. 51.
Pterodectes actidis, Radford, 1953, Parasitol., 42(3), 4): 214.
Brephosceles dolichocaulus Gaud and Mouchet, 1957, Ann. Parasitol. hum. comp., 32(5–6): 498–499, fig. 2B. (New synonymy)
Pterodectes actidis, Radford, 1958, Rev. Brasil. Entomol., 8: 127, 128, 130.
Brephosceles dolichocaulus, Gaud and Till, 1961, Publ. So. Afr. Inst. Med. Res., 11(L): 241.

Described from *Actitis hypoleucos* (L.) (Charadriiformes: Scolopacidae) from Europe, this mite species is known to occur on the type host in Barabinsk (Russian SFSR) and the Cameroons, and on the scolopacid *Erolia minuta* (Leisler) and *E. temminckii* (Leisler) in Europe. Gaud (personal communication) recognized that *Brephosceles dolichocaulus* should be a synonym of *Dichobrephosceles actitidis.*

A long, coiled genital organ rarely occurs in feather mite groups, but the supporting mechanism in this species is unique. From the genital arch, the genital organ is directed posteriorly, recurved anteriorly, and at the level of legs III, again directed posteriorly (figs. 8–11). After the final reflexion, the genital organ is clasped by a pair of genital guides (illustrated in a folded-down position) and then passes under a ∧-shaped paragenital sclerite and *over* the base of the genital organ.

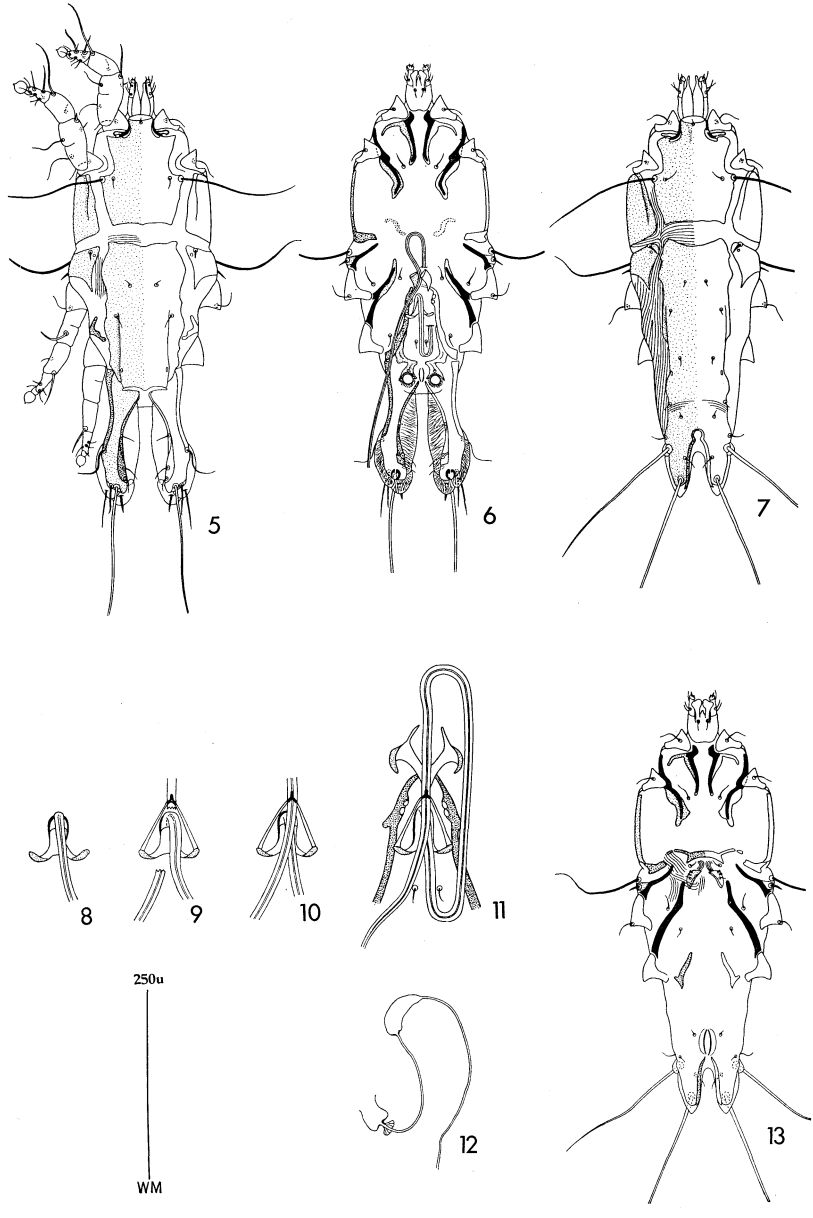
Dichobrephosceles eroliae, new species

The male of this species may be separated from the related *Dichobrephosceles actitidis* by the length of the genital organ and the development of the adanal shields. In *D. actitidis,* the genital organ is doubly recurved and extends to the terminus of the hysterosoma and the adanal shield is connected to the pregenital apodeme. In the new species, the genital organ is short and there are no connections between the adanal shield and the pregenital apodeme.

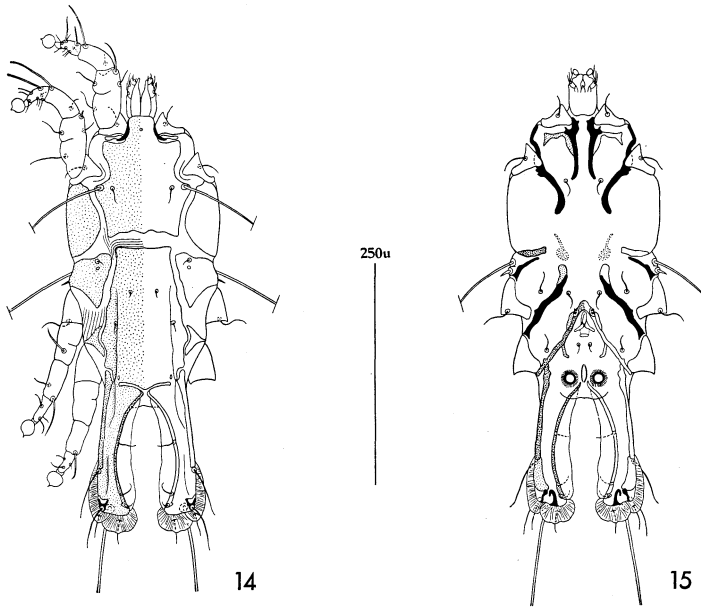
MALE (holotype). Length, excluding postlamellae, 482μ; width, 182μ. *Dorsal idiosoma*: Propodosomal shield 127μ in length, 125μ in width; setae *vi, si* and *se* present, seta *ve* absent; posterolateral margin tapered. Scapular shields well developed. Humeral shields with setae *sh* spiculiform, 11μ in length and posterior to setae *h.* Hysterosomal shield 300μ in length, 99μ in width; anterior margin straight. Hysterosomal lobes 130μ in length with setae d_3 at midlength, setae d_4 approximate to setae *pai,* and setae l_4 slightly longer than setae *pae* and d_5. *Ventral idiosoma*: Epimerites I free, slightly divergent; surface fields absent. Pregenital apodeme fused to epimerites IV*a* in shape of inverted V. Genital organ 11μ in length; adanal shields weakly developed.

FEMALE. Unknown.

Type Material. From *Erolia a. alpina* (Charadriiformes: Scolopacidae): holotype ♂, Kingsbridge, Devon, England, no additional data. The holotype is deposited in the University of Nebraska State Museum. The species is named *eroliae* for the host.



Figs. 5–13. *Dichobrephosceles actitidis* (Canestrini), male: dorsal (5) and ventral (6) aspects; female: dorsal (7) and ventral (13) aspects. Figs (8-11) illustrate in series the structure of the genital organ. Note also the unique spermatheca (12). The scale refers to the whole mounts.



Figs. 14–15. *Dichobrephosceles eroliae,* new species, dorsal and ventral aspects of male (14, 15).

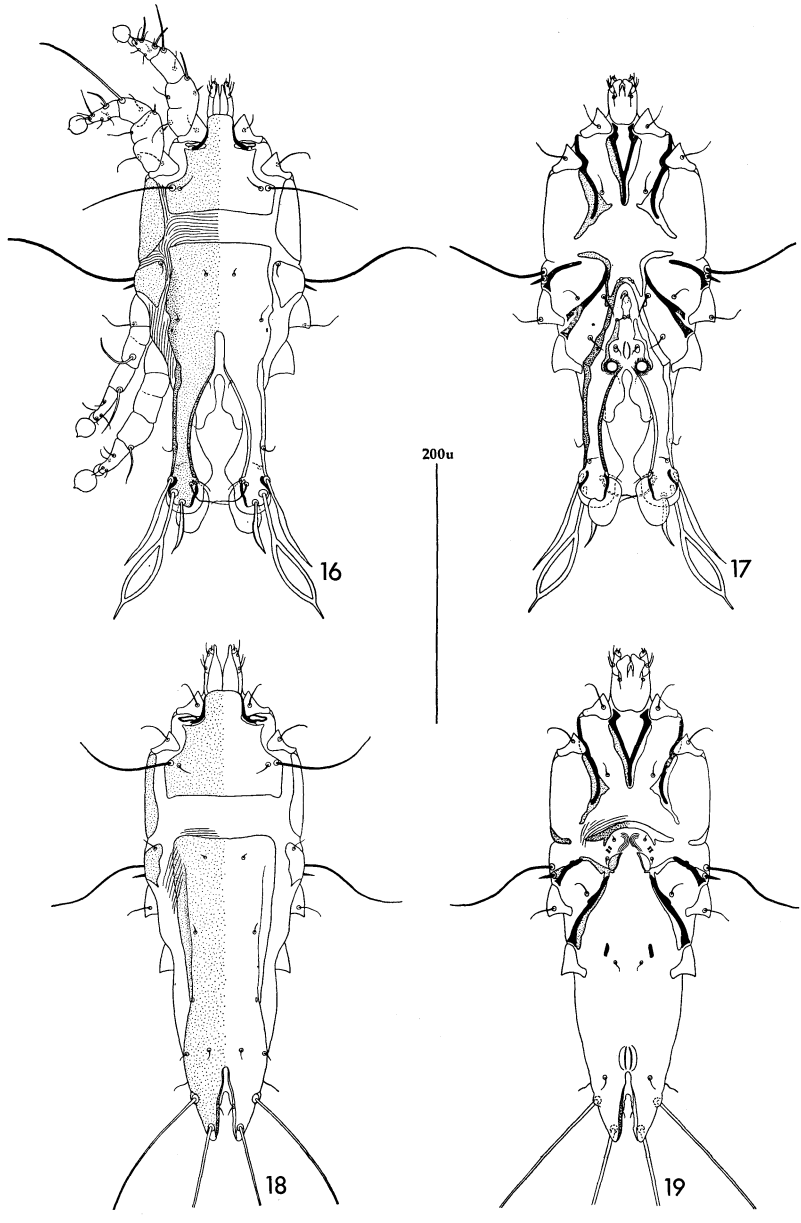
Homeobrephosceles, new genus

This new taxon, based on two species, is unique to the Proctophyllodidae because of the presence of setae *ba* on tarsi I-II. These setae, inserted at the bases of ω_1 are commonly observed in genera of the Pterolichidae and Avenzoariidae. Additional characters which maintain homogeneity in this small group include the absence of setae *vi, ve* and *kT* (on tibiae III).

Mites ectoparasitic on Heliornithidae (Gruiformes), Thinocoridae, Glareolidae (Charadriiformes). Both sexes with epimerites I Y-shaped, femora and genua of all legs partially fused, setae *vi, ve,* d_1 absent, setae *ba* on tarsi I–II and σ_1 on genu II present, seta *kT* on tibia III absent. Males with well-developed terminal lobes, legs IV slightly larger than legs III, coxal field III almost closed, coxal field IV closed, pregenital apodeme joined with epimerites IV*a,* genital organ small, 1 postlobar lamella; setae: d_3 on inner margin of lobe, d_5 on lobe and very small, *pae* ventral on lobe and small. Female similar to *Brephosceles* species, without terminal appendages, with pregenital apodeme independent, setae d_3, *a* (or *pae*) absent.

Type species: *Proctophyllodes (Alloptes) discosurus* Trouessart, 1886

Derivation: *Homeos,* similar + *Brephosceles.*



Figs. 16–19. *Homeobrephosceles discosurus* (Trouessart), male: dorsal (16) and ventral (17) aspects; female: dorsal (18) and ventral (19) aspects.

Homeobrephosceles discosurus (Trouessart), new combination

Proctophyllodes (Alloptes) discosurus Trouessart, 1886, Bull. Soc. Etud. Sci. Angers, 16: 142–143.

Alloptes discosurus, Canestrini and Kramer, 1899, Tierreich, 7: 112.

Alloptes discosurus, Gaud, 1953, Ann. Parasitol. hum. Comp., 28(3): 197.

Alloptes discosurus, Radford, 1953, Parasitol., 42(3), 4): 213.

Alloptes discosurus, Radford, 1958, Rev. Brasil. Entomol., 8: 125.

Brephosceles discosurus, Gaud and Till, 1961, Publ. So. Afr. Inst. Med. Res., 11(L): 241.

Described originally from *Podica senegalensis* (Vieillot) (Gruiformes: Heliornithidae) from West Africa, this species has been subsequently recorded from *Pluvianus aegypticus* (L.) (Charadriiformes: Glareolidae) in the Cameroons, French Equatorial Africa, and Uganda.

Homeobrephosceles orthothrix (Gaud and Mouchet), new combination

Brephosceles orthothrix Gaud and Mouchet, 1957, Ann. Parasitol. hum. comp., 32 (5–6): 500, fig. 2C.

Brephosceles orthothrix, Gaud and Till, 1961, Publ. So. Afr. Inst. Med. Res., 11(I): 242.

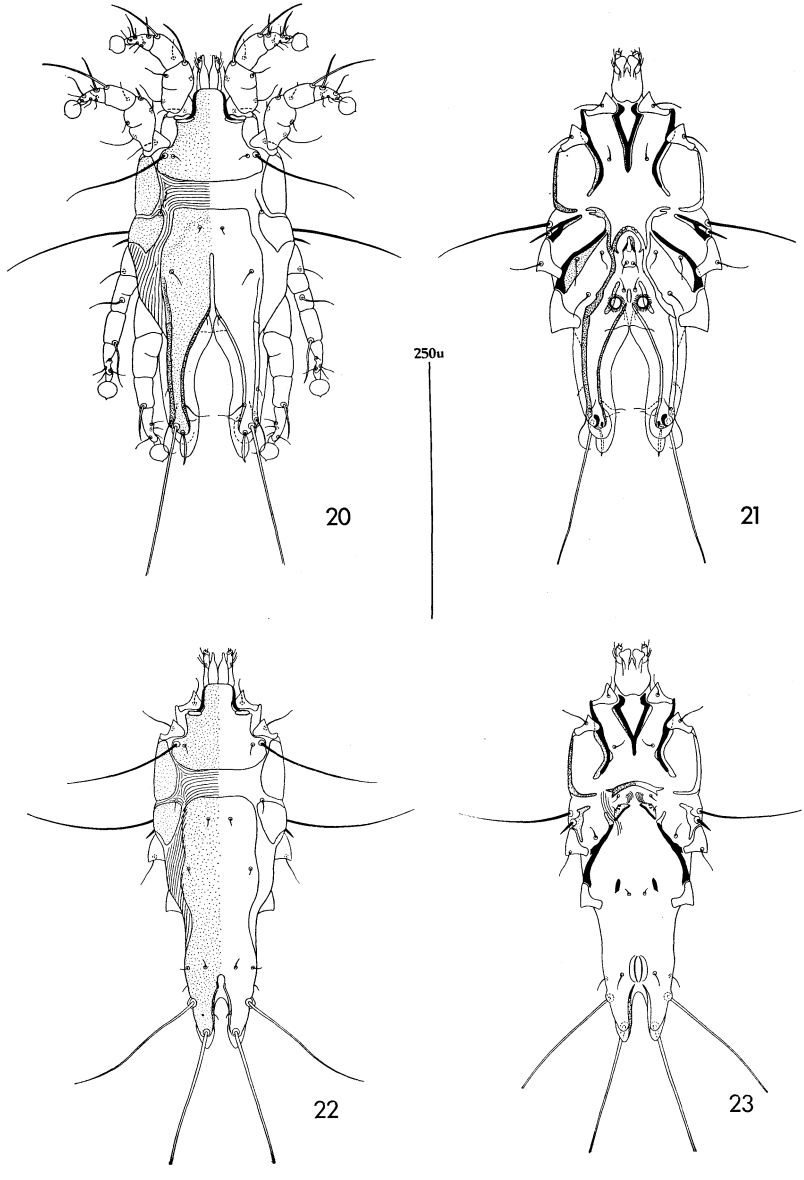
Brephosceles orthothrix, Gaud, 1964, Ann. Mus. Roy. Afr. cent., Zool., 80(132): 120.

Described originally from *Glareola nuchalis Lesson* (= *Galachrysia n.*) (Charadriiformes: Glareolidae) in the Cameroons, this species has been collected from the same host in Kenya and the Congo, from *G. cinerea* (Fraser) in the Congo, and from *G. lactea* Temminck in Thailand. *Homeobrephosceles orthothrix* has also been collected from one of the four species of the related Thinocoridae: *Attagis gayi latreillii* Lesson from Ecuador.

Onychalloptes, new genus

This genus is more closely related to the genus *Brephosceles* (*s.s.*) than the other taxa being described. It is characterized in part by the extreme size, heavily sclerotization, and falciform tarsi IV of the male. Other differentiating features include: setae l_1 and l_2 long, setae kT on tibia III absent, setae l_5 of the male with expansions (swellings), and the chelicerae of the females have elongated movable digits with lateral serrations.

Mites ectoparasitic on Phaetontidae (Pelecaniformes). Both sexes with epimerites I Y-shaped, femora and genua of all legs partially fused, setae *vi* present, setae *ve, kT* on tibia III, and *ba* on tarsi I–II absent, setae σ_1 on genu II present. Males with well-developed



Figs. 20–23. *Homeobrephosceles orthothrix* (Gaud and Mouchet), male: dorsal (20) and ventral (21) aspects; female: dorsal (22) and ventral (23) aspects.

terminal lobes, legs IV slightly larger than legs III, tarsi IV falciform, coxal fields III–IV open, pregenital apodeme joined with epimerites IV*a*, genital organ small, 2 postlobar lamellae, extralobar lamella reduced or absent; setae: d_3 on inner margin of lobe, d_5 on postlobar lamella and small, *pae* ventral and larger than l_4, l_5 with basal or medial expansion. Female similar to *Brephosceles* species, with or without terminal appendages, with setae *a*, *pae* and rarely d_4 absent, movable digit of chelicerae elongate with minute dentations, pregenital apodeme independent.

Type species: *Proctophyllodes (Alloptes) microphaeton* Trouessart, 1885.

Derivation: *Onycho,* claw + *Alloptes.*

Onychalloptes microphaeton (Trouessart), new combination

Proctophyllodes (Alloptes) microphaeton Trouessart, 1885, Bull. Soc. Etud. Sci. Angers, 14: 66–67.

Alloptes microphaeton, Poppe, 1888, Abhandl. Naturwiss. Ver. Bremen, 10: 211.

Alloptes microphaethon, Canestrini and Kramer, 1899, Tierreich, 7: 111.

Alloptes microphaethon, Radford, 1953, Parasitol., 42(3, 4): 213.

Alloptes microphaethon, Radford, 1958, Rev. Brasil. Entomol., 8: 112.

Brephosceles microphaeton, Gaud and Till, 1961, Publ. So. Afr. Inst. Med. Res., 11(L): 242.

(non) Laminalloptes microphaeton, Dubinin, 1955, Akad. Nauk. S.S.S.R,. Zool. Inst. Trudy, 18: 271–273, figs. 8(3, 5), 9(2), 11.

Originally described from *Phaeton aethereus* L. from the South Seas, the species of feather mite is now recorded from the same host in Lower California, from *P. rubricauda* Boddaert from Clipperton Island, Kure Island, Howland Island, Midway Islands and the Phoenix Islands, and from *P. lepturus* Daudin from the Midway Islands.

Onychalloptes minutus (Trouessart), new combination

Alloptes minutus Trouessart, 1899, Bull. Soc. Etud. Sci. Angers, 28: 34.

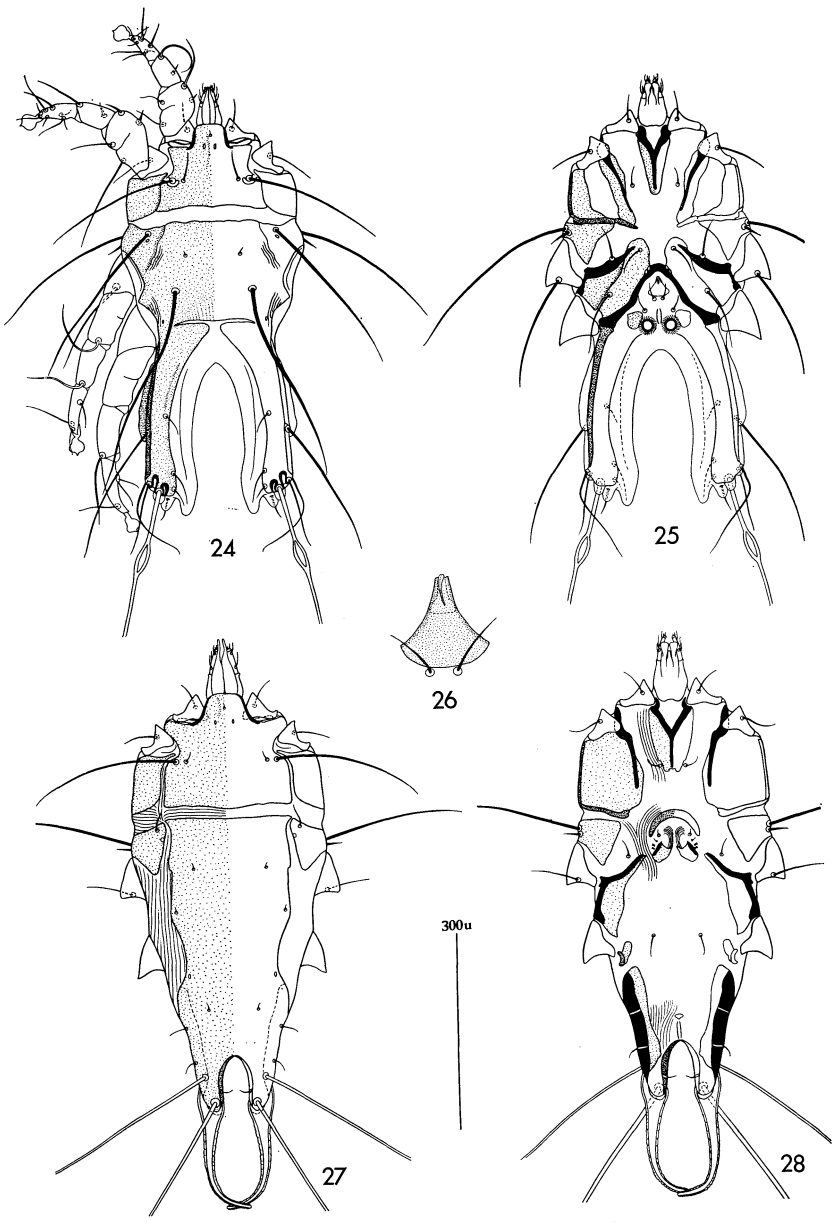
Alloptes minutus, Canestrini and Kramer, 1899, Tierreich, 7: 111.

Alloptes minutus, Radford, 1953, Parasitol., 42(3, 4): 213.

Alloptes minutus, Radford, 1958, Rev. Brasil. Entomol., 8: 112.

Brephosceles minutus, Gaud and Till, 1961, Publ. So. Afr. Inst. Med. Res., 11(L): 242.

(non) Laminalloptes minutus, Dubinin, 1955, Akad. Nauk S.S.S.R., Zool. Inst., Trudy, 18: 274.



Figs. 24–28. *Onychalloptes microphaeton* (Trouessart), male: dorsal (24) and ventral (25) aspects; female: dorsal (27) and ventral (28) aspects. An enlargement of the male genital region (26).

Phaeton aethereus L. and *P. rubricauda Boddaert* (= *P. phoenicurus*) from the South Seas are the type hosts; additional records are: *P. rubricauda* from the Midway Islands and the Phoenix Islands.

Aramolichus new genus

The genus *Aramolichus* is distinguished from the genus *Brephosceles* by the presence of setae d_1, the absence of setae *ve* and *vi*, the leaflike steae d_5, and the absence of extralobar lamellae.

Mites ectoparasitic on Aramidae (Gruiformes). Both sexes with epimerites I Y-shaped, femora and genua of all legs partially fused, all dorsal setae present except *ve* and *vi*, setae *kT* on tibia III and σ_1 on genu II present, setae *ba* on tarsi I–II absent. Male with well-developed terminal lobes, legs III–IV subequal, coxal field III open, coxal field IV closed, pregenital apodeme connected to epimerites IV*a*, genital organ small, 1 postlobar lamella, extralobar lamella absent; setae: d_3 on dorsal idiosoma anterior to terminal cleft, d_5 leaflike and on lobe, *pae* ventral on lobe. Female similar to *Brephosceles* species, without terminal appendages, with pregenital apodeme independent.

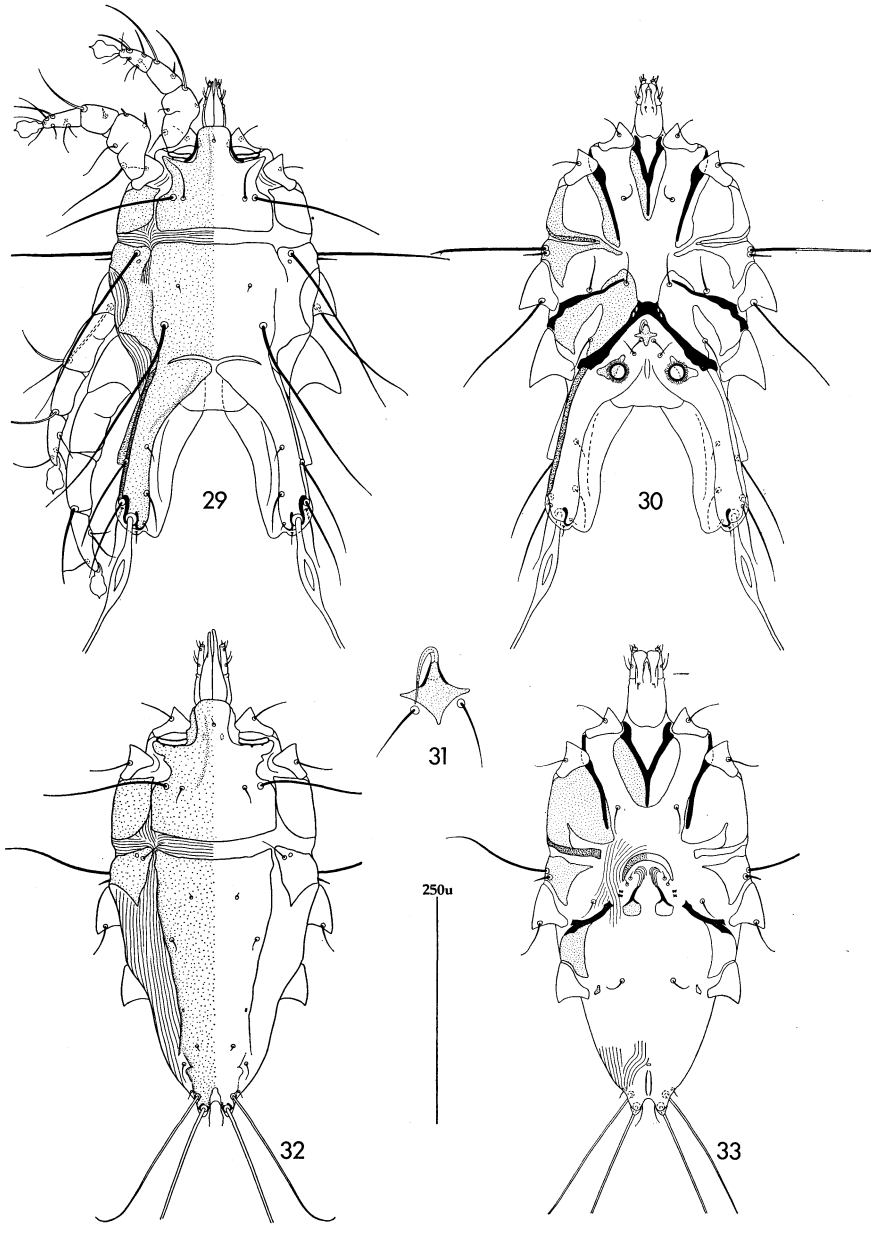
Type species: *Aramolichus foliatus*, new species.

Aramolichus foliatus, new species

This species is related to all taxa resembling the genus *Brephosceles*, but is distinguished by modifications unique or rare in the Alloptinae. The anastomoses of epimerites *IV*a and the pregenital apodeme, the presence of setae d_1, the absence of setae *vi*, and the leaflike setae d_5 form a unique combination of characters.

MALE (holotype). Length, including postlamellae, 364μ; width, 127μ. *Dorsal idiosoma*: Propodosomal shield 88μ in length, 90μ in width, setae *vi*, *ve* absent. Seta l_1 setaceous, positioned anterior to well-developed humeral shield; seta *sh* spiculiform, 13μ in length. Hysterosomal shield narrow with well-developed supranal concavity, with full complement of dorsal and lateral setae. Interlobar and postlobar lamellae present, extralobar lamellae absent; seta d_3 adjacent to supranal cleft; seta d_4 at midlength of inner margin of lobe; seta l_4 small, approximate to long seta *pae*; seta d_5 expanded with strong venation. *Ventral idiosoma*: Surface fields of epimerites I–II moderately developed; pregenital apodeme and epimerites IV*a* fused to form two bifurcations posterolateral to genital organ; coxal fields III open, IV closed; genital organ minute, not extending beyond setae c_2.

FEMALE (allotype). Length, 429μ; width, 132μ. Propodosomal shield 96μ in length, 93μ in width; setae *vi*, *ve* absent. Hysterosoma



Figs 29–33. *Onychalloptes minutus* (Trouessart), male: dorsal (29) and ventral (30) aspects; female: dorsal (32) and ventral (33) aspects. An enlargement of the male genital region (31).

with full complement of dorsal and lateral setae; with supranal concavity. Venter with surface fields of epimerites I–II moderately developed; pregenital apodeme independent, crescentic and extending beyond setae c_2.

Type material. From *Aramus guarauna* (L.) (Gruiformes: Aramidae): holotype ♂, allotype ♀, 10 ♂♂, 5 ♀♀ paratypes, Chatarona, D. Bsni, Bolivia, September 28, 1934, M. A. Carriker, Jr.; 2 ♂♂, 1 ♀ paratype, DeSoto County, Florida, November 20, 1886, W. R. Dean. The primary types are deposited at the University of Nebraska State Museum; secondary types are deposited in the British Museum (Natural History), University of Nebraska, U.S. National Museum, and the collection of J. Gaud, Rennes, France.

Psilobrephosceles, new genus

The subfamilies of the Proctophyllodidae have been successfully characterized (in part) by the presence or absence of the solenidion, $sigma_1$, on genu II. In the subfamilies Trouessartinae and Alloptinae $sigma_1$ is present, the Proctophyllodinae lack this structure. The males and females of the monobasic genus *Psilobrephosceles* are typical of the Alloptinae in most features except for $sigma_1$ on genu II, which is absent. Of the more than two hundred known species in the Proctophyllodidae, *Psilobrephosceles ortygometrae* is the only exception for this subfamilial character. In addition to the absence of $sigma_1$, the genus is characterized by the absence of setae *vi* and *ve*, the presence of seta *kT* on tibia III; in the male, the dorsal surface of the hysterosoma is without a suture at the base of the lobes and seta d_5 is fanlike.

Mites ectoparasitic on Rallidae (Gruiformes). Both sexes with epimerites I Y-shaped, femora and genua of all legs partially fused, all dorsal setae present except *vi* and *ve*, seta *kT* on tibia III present, setae *ba* on tarsi I–II and σ_1 on genu II absent. Male with well-developed terminal lobes not separated from anterior hysterosoma by suture, legs III–IV subequal, coxal field III open, coxal field IV closed, pregenital apodeme connected to epimerites IV*a*, genital organ small, 1 postlobar lamella; setae: d_5 fanlike and on lobe, *pae* ventral on lobe. Female similar to *Alloptes* species, without terminal appendages, with pre-genital apodeme independent.

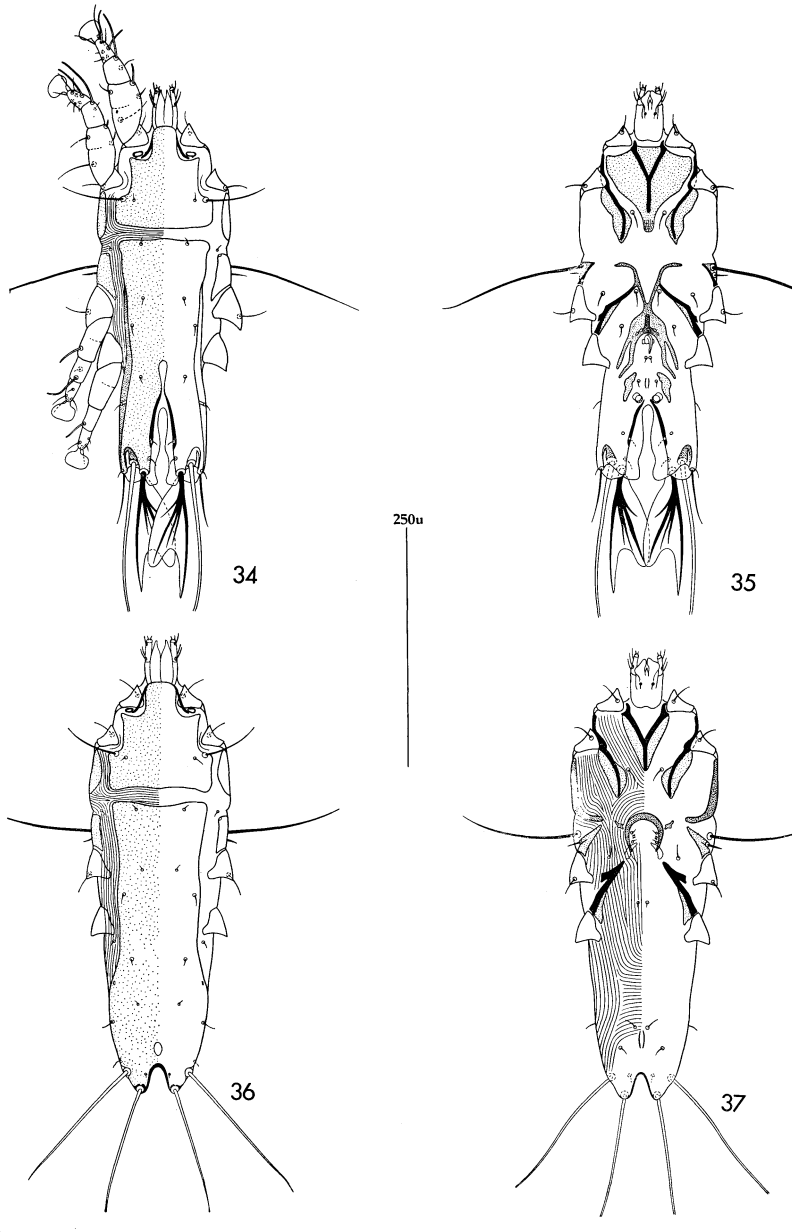
Type species: *Dermalichus ortygometrae* Canestrini, 1878.

Derivation: *Psilos*, without hair + *Brephosceles*.

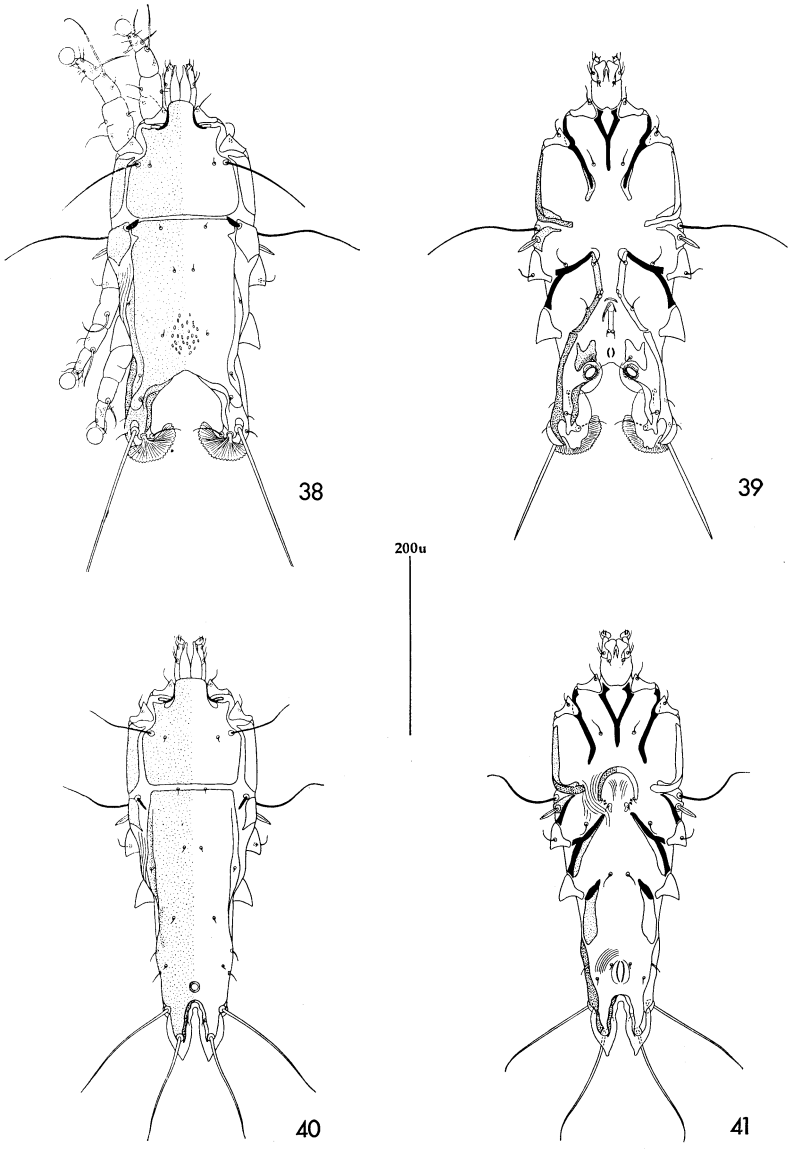
Psilobrephosceles ortygometrae (Canestrini), new combination

Dermalichus ortygometrae Canestrini, 1878, Atti. R. Inst. Veneto sci., ser. 5, 5: 58–60.

Pterolichus ortygometrae, Canestrini, 1879, Atti. Soc. Veneto-Trentina sci. nat., 6(1): 36.



Figs. 34–37. *Aramolichus foliatus,* new species: dorsal and ventral aspects of male (34, 35) and female (36, 37).



Figs. 38–41. *Psilobrephophosceles ortygometrae* (Canestrini), male: dorsal (38) and ventral (39) aspects; female: dorsal (40) and ventral (41) aspects.

Proctophyllodes (Pterocolus) ortygometrae, Trouessart, 1885, Bull. Soc. Etud. Sci. Angers, 14: 73.

Pterocolus ortygometrae, Berlese, 1886, A.M.S., fasc. 27, no. 1.

Pterocolus ortygometrae, Canestrini, 1886, Prosp. Acarofauna ital., 2: 295.

Pterodectes ortygometrae, Canestrini and Kramer, 1899, Tierreich, 7: 122.

Brephosceles ortygometrae, Dubinin, 1951, Akad. Nauk S.S.S.R., Zool. Inst., Parazitol. Sborn., 13: 222.

Brephosceles ortygometrae, Radford, 1953, Parasitol., 42(3), 4): 202.

Brephosceles ortygometrae, Radford, 1958, Rev. Brasil. Entomol., 8: 125.

Brephosceles ortygometrae, Gaud, 1957, Bull. Soc. Sci. nat. Phys. Maroc, 37(2): 114.

Brephosceles ortygometrae, Gaud and Till, 1961, Publ. So. Afr. Inst. Med. Res., 11(L): 242, fig. 149.

This long-known species has been collected from many species of Rallidae (Gruiformes). It was originally described from *Porzana pusilla* (Pallas) (= *Ortygometra p.*) from Europe and is now known from the same host in Burma, French Morocco and the Philippine Islands. Other known hosts are: *Porzana bicolor* Walden, China; *P. fusca* (L.), Malaya; *P. porzana* (L.), Europe; *P. parva* (Scopoli), Europe; *Poliolimnas cinereus* (Vieillot), Philippine Islands; *Limnocorax flavirostra* (Swainson), Cameroons; and *Gallinula chloropus* (L.), South Africa.

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